INTRODUCTORY COMMENTS

Sir:

This paper is being filed in response to an Office Action having a mailing date of September 13, 2007 that Applicant has received from the Patent Office and that relates to the above-identified patent application. Applicant respectfully requests that the patent application be reconsidered in view of the amendments and remarks presented hereinafter, which are submitted as a full and complete response to the aforementioned Office Action.

This paper is timely filed upon the mailing of same with an executed certificate of mailing on or before December 13, 2007. No fees are believed to be due by virtue of the filing of this paper. If it is determined that any fees are in fact due, please charge such fees to Deposit Account No. 50-0221.

Claims 1-6, 9, 10, 28-31, and 35-39 remain in the subject patent application. Claims 1, 4, 28-30, and 35 are amended and no claims are canceled herein. Claims 7, 8, 11-27, and 32-34 were canceled in an earlier paper. No claims are added herein.

AMENDMENTS TO THE SPECIFICATION

In accordance with 37 C.F.R. §1.121(b), please amend the specification of the application as indicated in marked-up form below, where additions are underlined, deletions are struck through, and new paragraphs are presented without markings.

Please amend paragraph [0024] of the patent application as follows:

As shown in Figure 1B, the surface of the microtool 100 is coated with an electroless nickel layer 106. An electroless nickel-phosphorus alloy typically has a hardness value (HV) of 500 on the Vickers Hardness Scale. The electroless deposition process produces a hard layer because of the amorphous, non-crystalline structure that results from the chemical deposition. Pure nickel, in contrast, is polycrystalline. In an alternative embodiment, the microtool 100 may be annealed, for example at 400°C for 1 hour, to increase the hardness of the layer 106. An annealed layer 106 may have a hardness value of 1100 or more. As mentioned above, wear resistance increases with increased hardness. Therefore, by increasing the hardness of the microtool 100, wear resistance increases and the microtool will last longer and form better impressions on a package substrate. An electroless nickel-phosphorus alloy heat treated for 1 hour will ~~loose~~ lose only between 1 and 4 milligrams per 1000 cycles according to the Taber Wear Index, and an electroless nickel-boron alloy will typically have increased wear resistance compared to an electroless nickel-phosphorus alloy.

Please amend paragraph [0033] of the patent application as follows:

In block 210, a metal layer is deposited over the electroless nickel layer 304. Figure 3C illustrates a metal layer 306 deposited over an electroless nickel layer 304. The metal layer 306 may be nickel or nickel alloy, which may be deposited using an electroplating process. According to one embodiment, since the electroless nickel layer 304 may become too brittle if it is applied ~~to~~ too thickly, another metal is used for the base of the microtool. The electroplating process is similar to the electroless plating process in that the mold 302 is deposited in a plating bath, however the mold 302 is not chemically

activated for the electroplating process. Instead, the ions in the plating bath are charged, and will be attracted to the electroless nickel layer 304 when a current is driven through the electroless nickel layer 304. The resulting metal layer 306 is not as hard as the electroless nickel layer 304, however it is more pliant, and therefore less likely to break. Since only the surface of the microtool, which is coated with the electroless nickel layer 304, will be in contact with the package substrate, the remainder of the microtool need not be as hard, and a less brittle material may be used to reduce the incidence of tool breakage. In another embodiment, a nickel alloy such as one of the alloys mentioned above may be used in place of the electroplated pure nickel. The nickel alloy may also be deposited using an electroplating process.